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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/535,387

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Yoshio Yoshida

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EXAMINER

SHEWAREGED, BETELHEM

ART UNIT

PAPER NUMBER

1794

NOTIFICATION DATE

DELIVERY MODE

12/01/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

garycohn@seattlepatent.com

Office Action Summary	Application No. 10/535,387	Applicant(s) YOSHIDA ET AL.	
	Examiner Betelhem Shewareged	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's response along with the Request for Continued Examination (RCE) filed on 09/30/2008 has been fully considered. Claims 1-20 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5, 7-12, 14 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (US 2002/0176970 A1), as evidenced by AEROSIL Datasheet (Internet Print out), in view Otani et al. (US 2001/0036552 A1).
4. Kobayashi teaches an ink jet recording sheet comprising a support, a colorant receiving layer applied on the support, and a boron compound applied onto the colorant receiving layer (abstract and [0090]). The boron compound meets the claimed treatment solution. The colorant receiving layer comprises a polyvinyl alcohol resin and a pigment containing a vapor phase process silica and a colloidal silica ([0068] and [0074]). The support is a resin coated paper [0174], wherein the coated resin meets the claimed undercoating layer. AEROSIL 300 is an example of the vapor phase process silica, and has a specific surface area of 300 m²/g, which is evidence by AEROSIL Datasheet. The amount of the vapor phase process silica is at least 50% by weight based on total pigment [0074]. The ratio of particles to binder is 1.5/1 to 10/1 [0085].

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Kobayashi does not teach that the colloidal silica has the claimed particle size and shape.

5. Otani teaches an ink jet recording material comprising a support and at least an outermost ink receiving layer having a binder and a pigment (abstract). The pigment can be colloidal silica having an average particle size of 30-500nm and a primary particle size of 5-60nm ([0018] and [0020], wherein the primary particles are linked up into chains to form a secondary particle (line 5 of [0020])).

6. Kobayashi and Otani are analogous art because they are from the same field of endeavor that is the ink jet recording sheet art. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the colloidal silica of Otani with the invention of Kobayashi in order to enhance ink absorbency and provide excellent color reproduction (see [0020] of Otani).

7. With respect to the value of specular gloss and image clarity/transparency, the Office realizes that all of the claimed effects or physical properties are not positively stated by the reference(s). However, the reference(s) teaches all of the claimed ingredients. Therefore, the claimed effects and physical properties, i.e. the value of specular gloss and image clarity/transparency would implicitly be achieved by a composition with all the claimed ingredients. If it is the applicant's position that this would not be the case: (1) evidence would need to be provided to support the applicant's position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain the claimed properties with only the claimed ingredients.

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8. With respect to the amount of colloidal silica based on the total particles, the experimental modification of this prior art in order to ascertain optimum operating conditions fails to render applicants' claims patentable in the absence of unexpected results. *In re Aller*, 105 USPQ 233. One of ordinary skill in the art would have been motivated to adjust the amount of colloidal silica in order to optimize ink receiving and printing properties of the layer. A prima facie case of obviousness may be rebutted, however, where the results of the optimizing variable, which is known to be result-effective, are unexpectedly good. *In re Boesch and Slaney*, 205 USPQ 215.

9. Claims 4, 6, 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (US 2002/0176970 A1), as evidenced by AEROSIL Datasheet (Internet Print out), in view Otani et al. (US 2001/0036552 A1) as applied to claims 1 and 2 above, and further in view of (Mishima et al. (US 6,183,851 B1) and Urs (US 2004/0063844 A1).

10. The combination of Kobayashi and Otani teach an ink jet recording medium as set forth above. Kobayashi teaches the colorant receiving layer further comprises electroconductive metal oxide particles and mat agents [0130].

11. Claims 4 and 13: Kobayashi does not teach γ -alumina as the electroconductive metal oxide particles. However, Mishima teaches an ink jet image recording medium comprising a support and a coating layer on the support (abstract), wherein the coating layer comprises inorganic particles such as γ -alumina (col. 8, lines 24-55). Kobayashi

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and Mishima are analogous art because they are from the same field of endeavor that is the ink jet recording medium art. At the time of the invention it would have been obvious to a person of ordinary skill in the art to combine the γ -alumina particles of Mishima with the invention of Kobayashi, and the motivation would be, as Kobayashi suggests, for preventing the frictional electrification and the peeling electrification of the surface of the layer [0130].

12. Claims 6 and 15: Kobayashi does not teach non-crystalline silica formed using a wet method as the mat agents. However, Urs teaches a coating composition comprising amorphous silica matting agent made according to "sol gel"/wet process [0024]. Kobayashi and Urs are analogous art because they are from similar problem solving area in relation to matt agents. At the time of the invention it would have been obvious to a person of ordinary skill in the art to combine the silica matting agents of Urs with the invention of Kobayashi, and the motivation would be, as Kobayashi suggests, for reducing surface friction [0130].

13. Claims 1, 3, 4, 6-13 and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mishima (US 6,183, 851 B1) in view of Otani et al. (US 2001/0036552 A1).

14. Mishima teaches an ink jet image recording medium comprising a support and a coating layer on the support (abstract). The coating layer comprises inorganic particles such as amorphous silica, gamma alumina and colloidal silica, and the particles may be

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used in combination (col. 8, lines 24-55). The support is a paper laminated with a polyolefin (col. 17, line 20), wherein the polyolefin meets the claimed undercoating layer. The coating layer further comprises a binder such as polyvinyl alcohol (col. 9, line 66). The ratio of particles to binder is disclosed in col. 11, line 48-62. Mishima does not teach the colloidal silica has the claimed particle size and shape.

15. Otani teaches an ink jet recording material comprising a support and at least an outermost ink receiving layer having a binder and a pigment (abstract). The pigment can be colloidal silica having an average particle size of 30-500nm and a primary particle size of 5-60nm ([0018] and [0020]), wherein the primary particles are linked up into chains to form a secondary particle (line 5 of [0020]).

16. Mishima and Otani are analogous art because they are from the same field of endeavor that is the ink jet recording sheet art. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the colloidal silica of Otani with the invention of Mishima in order to enhance ink absorbency and provide excellent color reproduction (see [0020] of Otani).

17. With respect to the value of specular gloss and image clarity/transparency, the Office realizes that all of the claimed effects or physical properties are not positively stated by the reference(s). However, the reference(s) teaches all of the claimed ingredients. Therefore, the claimed effects and physical properties, i.e. the value of specular gloss and image clarity/transparency would implicitly be achieved by a composition with all the claimed ingredients. If it is the applicant's position that this would not be the case: (1) evidence would need to be provided to support the

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applicant's position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain the claimed properties with only the claimed ingredients.

18. With respect to the amount of colloidal silica based on the total particles, the experimental modification of this prior art in order to ascertain optimum operating conditions fails to render applicants' claims patentable in the absence of unexpected results. *In re Aller*, 105 USPQ 233. One of ordinary skill in the art would have been motivated to adjust the amount of colloidal silica in order to optimize ink receiving and printing properties of the layer. A prima facie case of obviousness may be rebutted, however, where the results of the optimizing variable, which is known to be result-effective, are unexpectedly good. *In re Boesch and Slaney*, 205 USPQ 215.

Response to Arguments

19. Applicant's argument is based on that the value of specular gloss is not "implicitly achieved" by the teachings of the art, and in particular by the Otani reference, and this is the exact point of the experimental evidence that the applicants have repeatedly pointed out to the examiner. This argument is not persuasive for the following reason. The Examiner has reviewed all examples in the current specification and all Tables. Experiment C-2, C-4 and C-13 do not provide experimental evidence because the shape of the particles is not peanut/chain. In experiment C-10, the secondary/primary particle size ratio is limited to 5.5-8.0, and even though the chain shape meets the claimed peanut shape, the secondary/primary particle size ratio of Otani is not limited to

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5.5-8.0. The calculated secondary/primary particle size ratio of Otani includes values greater than 1 and less than or equal to 100, and this range includes the claimed range of 1.5-3.0. In fact, Experiments 2, 18 and 19 provide experimental evidence that the claimed properties would be achieved by the combination of Mishima and Otani, and also by the combination of Kobayashi and Otani, and the reason would be the chain shape of Otani meets the peanut shape in the experiments, the primary diameter of Otani includes the primary diameter in the experiments, the secondary diameter of Otani includes the secondary diameter in the experiment, and the calculated secondary/primary particle diameter ratio of Otani includes the secondary/primary particle diameter ratio in the experiments.

20. Furthermore, based on the claimed primary particle size and the claimed ratio of the secondary particle size to the primary particle size, the calculated secondary particle size of the claimed pigment/colloidal silica is 15-300nm. The secondary particle size of the equivalent pigment of Otani is 30-500nm, wherein this value overlaps with Applicant's calculated secondary particle size value. Thus, since the claimed primary particle size overlaps with Otani's primary particle size, and the Applicant's calculated secondary particle size overlaps with Otani's secondary particle size, it is established that the claimed ratio of the secondary particle size to the primary particle size is included within the calculated ratio of the secondary particle size to the primary particle size of Otani, that is between 1.0 and 100. It is also noted that an actual ratio of less than 1 is not attainable.

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21. Applicant further argued that within Otani's broad ranges, he does not recognize the shape of the colloidal silica as being result-effective. Otani does not recognize, within his broad ranges, that the ratio of secondary particle to primary particle diameter is result-effective. In fact, Otani makes no mention of this ratio at all; it is only with hindsight, with the benefit of applicants' disclosure, that one would look to derive this ratio from Otani's other teachings. It appears that this ratio had no significance whatsoever to Otani. This argument is not persuasive for the following reason. The Examiner did not try to show that the secondary/primary particle size ratio is optimizable. The calculated secondary/primary particle diameter ratio is taught by the reference of Otani (see paragraph 20). In paragraphs 8 and 18, the Examiner has shown that the amount of the colloidal silica is optimizable. Furthermore, the current specification does not show the criticality of the amount of the colloidal silica.

22. For the above reasons claims 1-20 stand rejected.

Conclusion

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betelhem Shewareged whose telephone number is (571)272-1529. The examiner can normally be reached on Monday-Friday 9am-5pm.

24. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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25. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BS

November 22, 2008.

/Betelhem Shewareged/

Primary Examiner, Art Unit 1794